EXHIBIT 44

HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN JOSE DIVISION

4

5   CISCO SYSTEMS, INC.,   )

)

6   Plaintiff,   )

) Case No.

7   vs.   ) 5:14-cv-05344-BLF (PSG)

)

8   ARISTA NETWORKS, INC.,   )

)

9   Defendant.   )

     _____)

10

11

12   HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

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14

15   VIDEOTAPED DEPOSITION OF KIRK LOUGHEED

16   Palo Alto, California

17   Friday, November 20, 2015

18   Volume I

19

20

21

22   Reported by:

     CARLA SOARES

23   CSR No. 5908

24   Job No. 2187110

25   Pages 1 - 189

                                        Page 1

1   BY MR. FERRALL: 15:38:30

2   Q   Okay. IBM didn't ask you for permission,

3   either, correct?

4   A   No.

5   Q   One of the CLI terms in this case is the   15:39:20

6   term "IP address."

7   Are you familiar with that?

8   A   I'm familiar with the command expression

9   "IP address."

10   Q   Did you come up with the phrase "IP   15:39:33

11   address"?

12   A   When Cisco came out of Stanford, we were

13   shipping an IP -- an Internet protocol only router.

14   And there was a command "address" that took some

15   arguments.   15:40:12

16   And after -- after a while, we started

17   adding other protocols to the software. The first

18   one was "DECnet." And since "address" was already

19   taken to refer to IP functionality, Internet

20   protocol functionality, we came up with "DECnet   15:40:44

21   address," and then had a DECnet address after it.

22   That "DECnet address" command could have

23   very well have said "address," and then DECnet

24   addresses look different than IP addresses, and we

25   could have had the software figure out which type of 15:41:11

                                                           Page 129

1   address we were referring to. But we chose "DECnet   15:41:13

2   address."

3   It became clear that much more -- that we

4   were becoming a multi-protocol router. We were

5   adding other protocols into the box, into the   15:41:27

6   software.

7   And I had -- I value -- I value the

8   aesthetic of having a symmetric-looking command line

9   expression, symmetric hierarchy. It was clear we

10   were heading towards a hierarchy.   15:41:52

11   So at some point after DECnet and perhaps

12   a few other protocols to make things look very

13   similar, we started prefacing our IP-only commands

14   with "IP." And that gave a very -- what I thought

15   was a very elegant, symmetric, elegant way of   15:42:16

16   referring to different protocols within a

17   multi-protocol router.

18   So that is the history of the "IP address"

19   command.

20   Q   Okay. My question was simpler. I   15:42:36

21   appreciate that answer. But my question was a

22   little simpler than that, but let me ask it a

23   different way.

24   You had heard of the term "IP address"

25   before you joined Cisco, hadn't you?   15:42:51

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```
 1              MR. NEUKOM:  Objection.  Vague and asked        15:42:59

 2   and answered.

 3              THE WITNESS:  I suppose I had.  When one

 4   is talking about different networking protocols, one

 5   needs to clarify which networking protocol one is      15:43:10

 6   talking about.  So it was probably terminology that

 7   was in the air.

 8   BY MR. FERRALL:

 9        Q   Does the same go for "IP host," also?  You

10   had heard that before you joined Cisco?                15:43:29

11              MR. NEUKOM:  Objection.  Misstates prior

12   testimony.

13              THE WITNESS:  The original form of the

14   "host" command was just "host command."  It was

15   another one that had to distinguish, in a              15:43:41

16   multi-protocol world, in a multi-protocol piece of

17   software, what you were talking about.

18              It would have looked very odd in a

19   multi-protocol router that there was one protocol

20   that wasn't prefaced by a -- some descriptive          15:44:03

21   keyword.

22   BY MR. FERRALL:

23        Q   Following up on that, the purpose of your

24   use of "IP" as the first keyword in that command "IP

25   host" was to distinguish the protocol that it's        15:44:33
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 1    the like, or "database lookup" or...              16:16:59

 2    BY MR. FERRALL:

 3         Q    Did you coin the term "domain lookup"?

 4         A    I decided to use that as a command

 5    expression within the software, yes.              16:17:21

 6         Q    I'll ask the question one more time.  I'm

 7    asking you if you coined the term "domain lookup."

 8              MR. NEUKOM:  Objection.  Asked and

 9    answered and vague.

10              THE WITNESS:  I did not.               16:17:43

11    BY MR. FERRALL:

12         Q    Do you know who did?

13         A    No idea.

14         Q    When was -- to your knowledge, when was

15    the term "routing" ever used in conjunction with the    16:18:41

16    Internet protocol?

17              MR. NEUKOM:  Objection.  Vague and

18    foundation.

19              THE WITNESS:  I don't know when the term

20    "routing" was used.                              16:19:05

21    BY MR. FERRALL:

22         Q    Were people in the field talking about

23    routing in connection with IP before you joined

24    Cisco?

25              MR. NEUKOM:  Objection.  Vague, compound.    16:19:24
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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   THE WITNESS: Yes.   16:19:27

2   BY MR. FERRALL:

3   Q   Tell me what, if anything, was creative

4   about your decision to use the term "IP routing" as

5   a CLI command.   16:19:51

6   MR. NEUKOM: Objection.   Calls for opinion

7   testimony.

8   THE WITNESS: At Stanford where we had

9   terminal servers and gateways in the same software,

10   there were times when it was convenient -- just   16:20:26

11   because something had multiple interfaces, it could

12   still perhaps be a terminal server. So I needed a

13   way of turning off, disabling routing functionality.

14   And I used the command -- I chose the

15   keyword -- configuration keyword command expression 16:21:07

16   "routing." Then "no routing" would turn off routing

17   functionality in whatever software was running at

18   the time despite its hardware configuration.

19   And then later on at Cisco, to keep the --

20   keep the form of the hierarchy of commands, we added 16:21:35

21   the -- we added our choice of -- we added "IP" in

22   front of it because you could potentially turn off

23   other sorts of routing, or at least that was the --

24   that was the -- that was a possibility for other

25   network protocols.   16:22:02

                                                    Page 145

1   BY MR. FERRALL: 16:22:10

2   Q   So you mentioned the term "hierarchy" a

3   couple of times now. So let me ask you to explain

4   the best you can, what is the hierarchy of the Cisco

5   CLI command?   16:22:38

6   A   I can give you examples. There aren't

7   many.

8   There's -- on the EXEC commands, you can

9   have things like "show" as a root of all the

10   commands that -- the root keyword for all the   16:23:15

11   commands that show status of the system.

12   And then at the next level in the

13   hierarchy, you can say, for example, "show

14   interface," or I could say, "show routing." Or I

15   could also say -- if I wanted to examine stuff that   16:23:40

16   was specific to -- specific to some IP-related

17   component of the system, my next keyword would be

18   "show IP," and then I would specify something like

19   "interface." And it would show me -- it would show

20   me the information about -- all the IP information   16:24:08

21   about all the interfaces.

22   And then I can extend that command to be

23   something like an interface name. So "show IP

24   interface," and then I specify an interface,

25   "Ethernet zero," and I see all the information   16:24:25

                                              Page 146

```
 1              MR. NEUKOM:  Objection.  Misstates prior      17:31:18

 2     testimony.

 3              THE WITNESS:  To the best of my

 4     recollection, soon after I acquired the copy of the

 5     Yeager software.                                        17:31:42

 6          I didn't like his lack of hierarchy, so I

 7     started grouping commands that displayed the status

 8     of data structures.  I started putting them under --

 9     I started building a hierarchy under "show."  It was

10     not a very deep hierarchy at the time.                  17:32:07

11     BY MR. FERRALL:

12          Q   So was "show" the first hierarchy that you

13     built?

14              MR. NEUKOM:  Objection.  Vague.

15              THE WITNESS:  I don't know if it was the       17:32:27

16     first.  It was an early one.

17     BY MR. FERRALL:

18          Q   And tell me about the process whereby you

19     selected the word "show."

20          A   I considered the function that I wanted.       17:32:44

21     I wanted to see what the contents of data structures

22     were inside the software.

23          And I had a number of possibilities.

24     There was "show," there was "display," there was

25     "print," there was "list," there was "dump."  All       17:33:08
```

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1   sorts of reasonable possibilities.   17:33:12

2   And the one that appealed to me was

3   "show."

4   Q   Why did "show" appeal to you?

5   A   Because in my mind, I said I want to tell   17:33:31

6   the software, show me your -- show me your data

7   structures.

8   Q   Why was that better in your mind than the

9   alternatives? Why was "show" better than the

10   alternatives?   17:33:51

11   A   It appealed to me aesthetically. I had to

12   pick something, and that one -- that one appealed to

13   me at that time.

14   Q   Had you ever heard of someone using the

15   two words "show users" together before you decided   17:34:37

16   to use that as a command?

17   MR. NEUKOM: Objection. Vague.

18   THE WITNESS: I don't have a memory of

19   that at this point.

20   BY MR. FERRALL: 17:35:30

21   Q   What about the term "show hosts"? Can you

22   tell me the creative process that went into choosing

23   that command?

24   A   So I wanted to see the names of the

25   computers that were on the network.   17:36:09

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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   There were -- possibilities included   17:36:24

2   something like "who," or -- that wouldn't go

3   anywhere because I wanted to start building things

4   into a hierarchy.   And I'd already started -- okay,

5   if I'm going to be showing some internal data   17:36:41

6   structure which showed -- show host would show that,

7   so I was already constrained by the choice of that

8   keyword to -- for displaying internal data

9   information.

10   I could have said something like   17:37:01

11   "computers."   I could have said something like

12   "names," "systems," "network systems."

13   Some people thought "end systems" was a

14   good thing to call -- to distinguish between

15   computers and routers.   "Host" was what I ended up   17:37:27

16   choosing.

17   Q   Okay.   Were you using the word "host" in

18   the command "show hosts" differently than how that

19   word had been used in networking for years before

20   that?   17:39:24

21   MR. NEUKOM: Okay.   Foundation, vague,

22   calls for opinion.

23   THE WITNESS: I'm not familiar with the

24   years before, but I was using the term as I

25   understood it at that time.   17:39:43

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 1    BY MR. FERRALL:                                   17:39:52

 2        Q   Well, you were aware that others in the

 3    computer field used the word "host," right, before

 4    you did?

 5            MR. NEUKOM:  Objection.  Foundation and    17:40:02

 6    vague.

 7            THE WITNESS:  I was not aware of anybody

 8    that was using that term in a command expression in

 9    a router or gateway, as we called it then.

10    BY MR. FERRALL:                                   17:40:25

11        Q   That wasn't my question.  My question was,

12    you were aware of people in the field of computing

13    using the word "host," right, before you used it?

14            MR. NEUKOM:  Same objections and asked and

15    answered.                                         17:40:46

16            THE WITNESS:  I was aware of people using

17    the word "host" in the computer field.

18    BY MR. FERRALL:

19        Q   Before you used it?

20        A   Yes.                                       17:41:04

21        Q   Now, according to your counsel, the

22    command "show host name" was created substantially

23    later; is that -- am I right about that?

24            MR. NEUKOM:  Objection to form.

25            THE WITNESS:  Are you asking me or my       17:41:41
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1   MR. FERRALL: Why don't we go off the   17:45:36

2   record and get a time check.

3   THE VIDEO OPERATOR: Going off the record,

4   the time is 5:45 p.m.

5   (Recess, 5:45 p.m. - 5:46 p.m.)   17:45:41

6   THE VIDEO OPERATOR: Back on the record,

7   the time is 5:46 p.m.

8   MR. NEUKOM: So back on the record. I

9   think we're all in agreement and the videographer

10   has confirmed that there are 26 minutes left.   17:46:06

11   MR. FERRALL: Right.

12   Q   So you have a set of commands that begin

13   with the keyword "clear," right?

14   A   Um-hum.

15   MR. NEUKOM: I think he needs a "yes" or a   17:46:36

16   "no."

17   THE WITNESS: Yes, the Cisco command line

18   interface has a hierarchy of command expressions

19   that begin with the keyword "clear."

20   BY MR. FERRALL: 17:46:55

21   Q   Were you aware of any operating system

22   that used the word "clear" as a command before you

23   joined Cisco?

24   MR. NEUKOM: Objection. Vague.

25   THE WITNESS: I believe there is a UNIX   17:47:21

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1   command "clear" that blanks a screen. I'm not aware   17:47:22

2   of any operating system that uses "clear" in the

3   sense that the Cisco CLI uses "clear."

4   BY MR. FERRALL:

5   Q   Tell me about the creative process that   17:47:57

6   went into your selection of the word "clear" as the

7   first keyword in these commands.

8   MR. NEUKOM: Objection.   Vague and

9   compound.

10   THE WITNESS: I needed some way of   17:48:19

11   resetting or clearing data structures in the box,

12   something that's very useful in the debugging of --

13   that sort of action is very useful in debugging

14   software, correcting problems in a running system

15   and the like.   17:48:53

16   And "reset" or "clear" or "zero" or

17   "restart" certainly could have been possibilities.

18   It was a very generically simple example.   It was

19   another sort of generic activity of I wanted to

20   clear or reset some data structures.   And that   17:49:20

21   one -- I don't recall, but I suspect that one seemed

22   reasonable and came to mind.

23   BY MR. FERRALL:

24   Q   Do you recall why you selected the word

25   "clear"?   17:49:47

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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   A   It seemed -- it seemed aesthetically   17:49:52

2   pleasing to me.   It was something that was

3   descriptive of an action that I wanted to take that

4   was a fairly generic action, a fairly common action.

5   Q   What does "banner MOTD" mean?   17:50:47

6   A   MOTD is message of the day.

7   Q   Did you make up that acronym?

8   A   No, I did not.

9   Q   Who did?

10   A   I don't know.   17:51:07

11   Q   Did you coin the term "banner" as an

12   operating system command?

13   MR. NEUKOM: Objection. Vague.

14   THE WITNESS: I simply implemented the

15   command.   17:51:37

16   BY MR. FERRALL:

17   Q   Are you aware of operating systems in

18   existence before you joined Cisco that used the

19   command "banner"?

20   A   I don't recall any at this point.   17:51:52

21   Q   When did you come up with the command

22   "banner MOTD"?

23   A   The command that came first was just

24   "banner," and its function was to print a vacant

25   terminal message on a terminal and to apply some   17:52:26

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```
 1    jitter in the positioning so that it wouldn't burn      17:52:31

 2    in those letters in the -- in one spot in the

 3    terminal.

 4            Then I think after we left Stanford --

 5    actually, I'm not clear when the MOTD was               17:52:55

 6    implemented.  I suspect it was after I left

 7    Stanford, but I'm not -- my memory is not clear on

 8    that.

 9        Q   So to be clear, you're not saying that you

10    came up with the term "banner" as a command, are       17:53:15

11    you?

12            MR. NEUKOM:  Objection.  Misstates prior

13    testimony, vague.

14            THE WITNESS:  I implemented certain

15    functionality that I triggered with that               17:53:26

16    configuration command.

17    BY MR. FERRALL:

18        Q   I'm going to ask the question again.

19            Are you saying that you came up with the

20    term "banner" as a command?                            17:53:38

21            MR. NEUKOM:  Same objections.

22            THE WITNESS:  That was a choice that I

23    made.

24    BY MR. FERRALL:

25        Q   You borrowed it from another operating         17:53:55
```

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1   A   IPv6 address.   IPv6 route.   18:08:37

2   Q   What was your role in composing IPv6

3   address?

4   A   I was creating a prototype IPv6

5   implementation.   18:09:03

6   Q   Did you come up with that command, "IPv6

7   address"?

8   A   Yes.

9   Q   When did you do that?

10   A   I believe it was 1996.   18:09:21

11   Q   Did you work with anyone else on that?

12   A   Yes.

13   Q   Who?

14   A   Dino Farinacci and Rand Atkinson, and

15   later Pedro Marquez.   18:09:42

16   Q   The other one you said was IPv6 route?

17   A   That may have been Dino.

18   MR. FERRALL: Let me go off the record for

19   a second.

20   THE VIDEO OPERATOR: Going off the record,   18:10:11

21   the time is 6:10 p.m.

22   (Recess, 6:10 p.m. - 6:11 p.m.)

23   THE VIDEO OPERATOR: Back on the record.

24   The time is 6:11 p.m.

25   ///   18:11:34

                                                      Page 184

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 1   BY MR. FERRALL:                                      18:11:36

 2        Q   Did you compose the command "timers basic

 3   RIP"?

 4        A   I believe I did.

 5        Q   Prior to your joining Cisco, are you        18:11:55

 6   familiar with any commands that use the word

 7   "timers"?

 8            MR. NEUKOM:  Objection.  Vague.

 9            THE WITNESS:  No, I was not aware of any

10   operating system, general purpose or network        18:12:13

11   specific, that used -- had a "timers" command.

12   BY MR. FERRALL:

13        Q   How did you come up with the command

14   "timers basic RIP"?  Describe that creative process

15   for me.                                              18:12:30

16        A   There developed a need or a desire to

17   change some of the fundamental timing constants

18   of -- I think first was the IGRP routing protocol,

19   and I implemented a command that allowed those

20   timers to be user-configured.                        18:12:59

21            And later on I or someone else extended

22   that to the RIP timers so customers could speed up

23   or slow down the pulse of routing updates.

24        Q   And when did that occur?

25        A   1988 or 1989.                               18:13:36
```

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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   Q   How did you choose the term -- the words   18:13:39

2   "timers basic" for this function?

3   A   I don't remember where "basic" came from.

4   But using the keyword "timers" was my -- was my

5   introduction, was my creation.   18:14:00

6   MR. NEUKOM: Counsel, I believe we're now

7   beyond seven hours.

8   MR. FERRALL: Okay. Well, I -- given

9   Mr. Lougheed's tenure at Cisco, I thank him for his

10   time, but I will say I think we deserve some more   18:14:22

11   time with him.

12   But I understand seven hours is up and

13   you're going to say enough is enough for today I

14   take it; is that right?

15   MR. NEUKOM: Certainly for today for the   18:14:31

16   sake of the witness. And we will respectfully

17   disagree with the idea that counsel needs more than

18   seven hours --

19   MR. FERRALL: Okay.

20   MR. NEUKOM: -- needs more than today.   18:14:41

21   But we can discuss that for another day.

22   In the meantime, I should note for the

23   record the witness reserves the right to review the

24   transcript and make corrections.

25   Brian, I'm not sure I did that for   18:14:51

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1   Mr. Tjong. If you're okay with it, I'd like to just   18:14:53

2   do a stipulation across the case that both sides

3   have the 30-day review and errata right for all

4   transcripts regardless whether counsel puts it on

5   the record at the depo as a two-way street.   18:15:04

6   MR. FERRALL: That's fine. I thought it

7   existed as a matter of procedure anyway. So that's

8   fine.

9   MR. NEUKOM: I hope you're right, but glad

10   to have the stipulation, even if it's unnecessary.   18:15:17

11   MR. FERRALL: Okay.

12   MR. NEUKOM: Thanks very much.

13   THE VIDEO OPERATOR: This concludes

14   today's videotaped deposition of Mr. Kirk Lougheed.

15   We're off the record at 6:15 p.m. Thank you.   18:15:25

16   (TIME NOTED: 6:15 p.m.)

17   --o0o--

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HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY

1   UNITED STATES DISTRICT COURT

2   NORTHERN DISTRICT OF CALIFORNIA

3   SAN JOSE DIVISION

4

    CISCO SYSTEMS, INC.   Case No.: 5:14-cv-05344-BLF(PSG)

5

                    Plaintiff,

6

         v.

7

    ARISTA NETWORKS, INC.

8

                    Defendants.

9   _____

10

11

12

13   * HIGHLY CONFIDENTIAL - ATTORNEYS' EYES ONLY *

14   VIDEOTAPED DEPOSITION OF KIRK LOUGHEED

15   Palo Alto, California

16   Monday, April 4, 2016

17   Volume 2

18

19

20

21   Reported by:

22   LESLIE JOHNSON

23   RPR, CSR No. 11451

24   Job No.: 2285024

25   PAGES 190 - 399

                                            Page 190

1   who is we?

2   A.   Myself and the engineers at Cisco.

3   Q.   Have you ever heard of engineers outside

4   of Cisco using the term "IP route" to distinguish

5   between an IP route and a DECnet route or a PUP

6   route?

7   A.   I was -- I wasn't particularly associating

8   with engineers doing network protocol outside of

9   Cisco. And if it was -- if it was -- I wouldn't be

10   surprised if others did, but I -- I was using my own

11   internal terminology as to what I felt was my own

12   internal -- our internal terminology.

13   Q.   Did you personally come up with the term

14   "IP route"?

15   A.   In the first software I actually used

16   "route" because there was no need to -- the original

17   software was IP only. There was no need to

18   distinguish.

19   Q.   It was not a multiprotocol?

20   A.   The original stuff was not multiprotocol.

21   Q.   How long did it take for you to come up

22   with the command "show ip route," the syntax?

23   A.   Once I made the decision that we needed to

24   generalize the command hierarchy so that we could

25   distinguish between commands with similar functions

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1   but for different protocols, then it was a very easy

2   generalization.

3   Q.   So a matter of minutes?

4   A.   Once the decision had been made to do

5   that, yes.

6   Q.   What do you think is creative about the

7   command "show ip route"?

8   MR. NEUKOM: Objection.   Calls for opinion

9   and legal conclusion.

10   THE WITNESS: So for the "route" command,

11   I originally needed some way of saying -- what I

12   needed was a way of indicating to the software that

13   if I had a packet destined for a particular network,

14   which is the first argument, that I send it to a

15   particular IP address, which is the IP address of a

16   router.   And one of those list of network and router

17   pairs may actually be the default, if I didn't find

18   a network mentioned anywhere and couldn't figure out

19   what to do with it.   Otherwise, send it to this

20   particular router or gateway.   Those are the pieces

21   of information that I needed, and I just -- I chose

22   the name "route."   And "IP route" came along

23   afterwards.

24   BY MR. WONG:

25   Q.   Are you the originator of the "show

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1   spanning-tree" command?

2   A.   Yes, I am.

3   Q.   What is a spanning tree?

4   A.   My testimony earlier in the day addresses

5   that question.

6   Q.   So thank you.

7   And your explanation of what is a spanning

8   tree earlier in today's deposition would be the same

9   for my question regarding the "show spanning-tree"

10   command; is that correct?

11   A.   Right.

12   Q.   And what functionality does the "show

13   spanning-tree" command perform?

14   A.   It displayed global parameters having to

15   do with the spanning tree and interface-specific

16   parameters having to do with the spanning tree on

17   the box.

18   Q.   And the term "spanning tree," you didn't

19   come up with that, right, Mr. Lougheed?

20   A.   No, I didn't.

21   Q.   The term "spanning tree" is used in

22   ANSI/IEEE standards, correct?

23   A.   Yes. To my knowledge.

24   (Exhibit 467 marked for identification.)

25   / / / /

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 1   Q.   And why did you choose to put a hyphen

 2   between the words "spanning" and "tree"?

 3   A.   Because I like English phrases and I like

 4   separating them with dashes.

 5   Q.   Why did you --

 6   A.   And I saw -- go ahead.

 7   Q.   No, no. I interrupted you, Mr. Lougheed.

 8   Go ahead.

 9   A.   And I had no concept or no belief at the

10   time that I would need to turn that into a

11   hierarchy.

12   Q.   And when you say -- refer to a need to

13   turn it into a hierarchy, are you referring to the

14   option of using a space instead of a hyphen in

15   between the word "spanning" and "tree"?

16   A.   Yes.

17   Q.   How long did it take for you to come up

18   with the command "show spanning-tree," the syntax?

19   A.   The syntax? Once I had the protocol

20   working, wouldn't have been very long.

21   Q.   Matter of minutes?

22   A.   Less than a day.

23   Q.   Do you think the command "show

24   spanning-tree" is creative?

25   A.   I don't understand.

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1   MR. NEUKOM: Objection. Calls for opinion

2   testimony.

3   THE WITNESS: I don't understand what you

4   mean by the word "creative."

5   BY MR. WONG:

6   Q.   Do you believe that it took any degree of

7   creativity to come up with the command "show

8   spanning-tree"?

9   MR. NEUKOM: Same objection. Calls for

10   opinion testimony. Also calls for a legal

11   conclusion.

12   But notwithstanding my objections, you

13   should still try to answer these questions to the

14   best of your ability.

15   THE WITNESS: And the question is?

16   BY MR. WONG:

17   Q.   Do you believe that it took any creativity

18   to come up with the command "show spanning-tree"?

19   A.   I do believe that it shows a degree of

20   creativity.

21   Q.   And describe -- go ahead.

22   A.   I mean --

23   Q.   Were you done with your answer?

24   A.   Yes.

25   Q.   And what is creative about the command

1   "show spanning-tree"?

2   MR. NEUKOM: Objection. Calls for a legal

3   conclusion and calls for opinion testimony.

4   THE WITNESS: And I just -- I'm not sure

5   what the hell you mean by "creative."

6   BY MR. WONG:

7   Q.   Have you -- do you know what the word

8   "creative" means?

9   What do you understand the word "creative"

10   to mean? The question is, what do you understand

11   the word "creative" to mean?

12   MR. NEUKOM: Objection to form.

13   THE WITNESS: It's the ability to create

14   things. And I was creating a command expression to

15   monitor a piece of complex software.

16   What do you mean by "creative"?

17   BY MR. WONG:

18   Q.   I'm going to use your definition of

19   creative here, Mr. Lougheed. Under your definition

20   of "creative," what's creative about the "show

21   spanning-tree" command?

22   MR. NEUKOM: Objection. Calls for opinion

23   testimony and calls for a legal conclusion.

24   THE WITNESS: Writing any piece of

25   software involves some degree of creativity. It may

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1   not be at the Shakespearean level, but maybe more

2   prosaic.   But you actually have to figure out

3   something.   You have to create something to show how

4   stuff is done or to create something to communicate.

5   And that's what I was doing was creating something

6   to communicate to the customer, to the user of the

7   stuff, here is a command expression that will get

8   you information, and it's easy enough to understand

9   what was being done.

10   MR. NEUKOM: I think we've now been going

11   for about an hour, 15 minutes, thereabouts.   Should

12   we take a short break.

13   MR. WONG: I only have one more command

14   and we can wrap up this volume.   It could be fast.

15   Can you do another . . .

16   MR. NEUKOM: Just from looking at

17   Mr. Lougheed, he looks to me like a man who could

18   use five minutes of sunshine.

19   MR. WONG: I'll leave it up to you,

20   Mr. Lougheed, but in terms of these command-specific

21   questions, I only have one more.

22   THE WITNESS: I'd like to take a break.

23   MR. WONG: Okay.   Sure.

24   MR. NEUKOM: Just for a little bit.

25   MR. WONG: Sure.

1   THE VIDEOGRAPHER: Going off the record.

2   The time is 2:35 p.m.

3   (A recess was taken.)

4   THE VIDEOGRAPHER: Back on the record.

5   The time is 2:51 p.m.

6   BY MR. WONG:

7   Q.   Mr. Lougheed, are you the

8   author/originator of the "timers bgp" command?

9   A.   Yes, I am.

10   Q.   How do you know that you are the

11   originator of the "timers bgp" command?

12   A.   Because I remember creating the command.

13   I created the original BGP support.

14   Q.   If you look at Exhibit -- well, before we

15   do that, do you know approximately when you came up

16   with the "timers bgp" command?

17   A.   It would be sometime in 1989.

18   Q.   Okay. If you look at Exhibit 464,

19   page 42. Let me know when you're there.

20   A.   Yep.

21   Q.   You see fourth from the bottom in the

22   table, there's the "timers bgp" command shown there?

23   A.   Uh-huh.

24   Q.   And the date of earliest known document

25   for the "timers bgp" command in Exhibit 464 says

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